What is claimed is:

1       1.     A method of establishing a call in a wireless network, comprising:

2             sending a request for a packet-switched call over the wireless network;

3   and

4             communicating control signaling in a traffic channel of the wireless

5   network to establish the packet-switched call.

1       2.     The method of claim 1, wherein sending the request comprises sending the

2   request in a random access channel.

1       3.     The method of claim 2, wherein sending the request comprises sending a

2   predefined code in a random access channel of an Enhanced General Packet Radio

3   Services system.

1       4.     The method of claim 3, wherein sending the code comprises sending the

2   code in a channel selected from the group consisting of a RACH, PRACH, and

3   CPRACH.

1       5.     The method of claim 1, further comprising retrieving a pre-assigned code

2   to send in the request.

1       6.     The method of claim 5, wherein retrieving the pre-assigned code

2   comprises retrieving a random access channel mobile station code.

1       7.     The method of claim 1, wherein communicating the control signaling

2   comprises communicating the control signaling in a packet data traffic channel.

1       8.     The method of claim 7, wherein communicating the control signaling

2   comprises communicating the control signaling in PDTCH bursts of an Enhanced

3   General Packet Radio Services system.

1       9.      The method of claim 7, wherein communicating the control signaling

2   comprises communicating the control signaling in a packet data traffic channel mapped to

3   a dedicated physical channel.

1      10.    The method of claim 9, further comprising communicating bearer traffic

2   in another traffic channel mapped to the dedicated physical channel.

1      11.    The method of claim 10, wherein communicating the control signaling

2   comprises communicating the control signaling in a PDTCH, and wherein

3   communicating the bearer traffic comprises communicating the bearer traffic in a TCH,

4   the PDTCH and TCH defined according to an Enhanced General Packet Radio Services

5   protocol.

1      12.    The method of claim 1, wherein communicating the control signaling

2   comprises communicating Session Initiation Protocol messages.

1      13.    The method of claim 12, wherein communicating the control signaling

2   comprises communicating a Session Initiation Protocol Invite request.

1      14.    The method of claim 1, further comprising sending a release message to

2   terminate the packet-switched call in a traffic channel.

1      15.    The method of claim 14, wherein sending the release message comprises

2   sending a Session Initiation Protocol Bye message.

1      16.    The method of claim 1, further comprising sending quality-of-service

2   related messages in a traffic channel.

1      17.    The method of claim 16, wherein sending the quality-of-service related

2   messages comprises sending Resource Reservation Protocol messages.

1     18.     The method of claim 1, wherein communicating the control signaling

2    comprises communicating the control signaling in PDTCH bursts, the method further

3    comprising communicating bearer traffic in TCH bursts.

1     19.     The method of claim 1, wherein communicating the control signaling

2    comprises communicating the control signaling in PDTCH bursts, the method further

3    comprising communicating bearer traffic in PDTCH bursts.

1     20.     An article comprising one or more storage media containing instructions

2    that when executed cause a controller to:

3         send control signaling to request a channel for a packet-switched call over

4    a wireless network; and

5         add a predetermined code into the control signaling to identify the call as a

6    packet-switched call.

1     21.     The article of claim 20, wherein the instructions when executed cause the

2    controller to send the control signaling selected from the group consisting of RACH,

3    PRACH, and CPRACH.

1     22.     The article of claim 20, wherein the instructions when executed cause the

2    controller to further communicate packet-switched call control signaling in traffic

3    channels of the wireless network.

1     23.     The article of claim 20, wherein the instructions when executed cause the

2    controller to communicate Session Initiation Protocol messages in traffic channels of the

3    wireless network.

1     24.     The article of claim 23, wherein the instructions when executed cause the

2    controller to communicate the Session Initiation Protocol messages in PDTCH bursts of a

3    General Packet Radio Services system.

1    25.    The article of claim 23, wherein the instructions when executed cause the

2    controller to communicate a Session Initiation Protocol Invite message.


1    26.    The article of claim 25, wherein the instructions when executed cause the

2    controller to receive response messages to the Invite message.


1    27.    The article of claim 23, wherein the instructions when executed cause the

2    controller to communicate a Session Initiation Protocol Bye message to release a call.


1    28.    The article of claim 23, wherein the instructions when executed cause the

2    controller to communicate messages to provide a supplementary service.


1    29.    A mobile station for use in a wireless communications system having base

2    stations, comprising:

3            a storage element storing a predetermined code associated with packet-

4    switched calls; and

5            a controller to send control signaling to one of the base stations over a

6    wireless link to set up a packet-based call,

7            the control signaling containing the predetermined code.


1    30.    The mobile station of claim 29, wherein the control signaling comprises a

2    random access channel.


1    31.    The mobile station of claim 30, wherein the random access channel

2    comprises a packet random access channel.


1    32.    The mobile station of claim 31, wherein the packet random access channel

2    comprises a COMPACT packet random access channel.

1    33.    A radio network control system, comprising:

2            an interface to a wireless link capable of communicating with a mobile

3    station; and

4            a controller adapted to receive a request to set up a packet-switched call

5    over the wireless link,

6            the controller further adapted to assign a logical channel combination in

7    response to the request.


1    34.    The radio network control system of claim 33, wherein the logical channel

2    combination comprises TCH + FACCH + SACCH + PDTCH + PACCH + PTCCH.


1    35.    The radio network control system of claim 34, wherein the controller is

2    adapted to communicate Session Initiation Protocol messages are in PDTCH bursts.


1    36.    The radio network control system of claim 34, wherein the controller is

2    adapted to communicate a success indication of a packet-switched call session in a

3    PACCH burst.


1    37.    The radio network control system of claim 34, wherein the controller is

2    adapted to communicate radio resource management signaling in a PACCH burst to

3    indicate a state of the packet-switched call.


1    38.    A data signal embodied in a carrier wave and containing instructions that

2    when executed cause a system in a wireless network to:

3            receive control signaling to set up a packet-switched call over the wireless

4    network, the control signaling carried in a first traffic channel; and

5            establish the packet-switched call over the wireless network.


1    39.    The data signal of claim 38, wherein the instructions when executed cause

2    the system to further communicate bearer data in a second traffic channel.

1        40.     The data signal of claim 39, wherein the control signaling is carried in a

2    PDTCH and the bearer data is carried in a TCH.

1        41.     The data signal of claim 38, wherein the instructions when executed cause

2    the system to further communicate bearer data in the first traffic channel.